



Photonics workstation for optical manipulation

Perch-Nielsen, Ivan R.; Dam, Jeppe Seidelin; Palima, Darwin; Glückstad, Jesper

Publication date:
2008

[Link back to DTU Orbit](#)

Citation (APA):

Perch-Nielsen, I. R., Dam, J. S., Palima, D., & Glückstad, J. (2008). *Photonics workstation for optical manipulation*. Abstract from Danish Physical Society Annual Meeting 2008, Nyborg Strand, Denmark. <http://orbit.dtu.dk/getResource?recordId=228862&objectId=1&versionId=1>

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Photonics workstation for optical manipulation

By Ivan R. Perch-Nielsen

and

Jeppe S. Dam, Darwin Palima and Jesper Glückstad

DTU Fotonik, Department of Photonics Engineering

Frederiksborgvej 399, P.O.49, DK-4000 Roskilde, Denmark

Presentation type: talk

Optical forces have established a track-record of non-contact handling of micro particles and cells suspended in fluidic environments. We have extended this tool with a multi-beam optical trapping setup based on counterpropagating beam geometry. This system is capable of dynamic 3D positioning of particles with real-time user control. However, due to the serial nature of a modern mouse-driven user interface, a dynamic many-particle experiment can be difficult for the operator to handle. Here we present the trapping method and how to extend the capability of the user by using computer assisted trapping, and how the feedback for the computer can be enhanced. As a demonstration the system are used for controlling microfabricated tools and assemble custom made building blocks.